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Changes in the support networks of older adults in the Netherlands

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Abstract. At first, the study describes the hierarchy in types of network members who provide instrumental and/or emotional support within a sample of older Dutch adults aged between 55 and 89 ($n = 2,709$). The hierarchy of instrumental support differs by partner status of the older adult, but the hierarchy in emotional support does not vary with the availability of partner or children. Secondly, multi-level regression analyses using longitudinal data indicate that 46 bereaved older adults received increased instrumental support from their network, while their receipt of emotional support remained unchanged. Shifts in the hierarchy of instrumental support were observed, but not in the hierarchy of emotional support. Older people who suffered a decrease in physical mobility ($n = 384$) received more instrumental and emotional support, but the ranking of supporter types changed little. It is concluded that despite changes in intensity of support, the hierarchies of types of supporters have generally remained stable over time.

Key words: Social network, Support, Life events, Longitudinal data, the Netherlands

Introduction

A key function of the personal network involves the exchange of support between the focal person and his or her network members. Sufficient and adequately timed support helps people to master daily problems as well as difficult life transitions. It can prevent feelings of loneliness and facilitate well-being. Many studies have provided data that underscore the necessity and value of network support for older adults (Antonucci 1990; Antonucci & Akiyama 1987; Dykstra 1990; Knipscheer 1980; Lee 1985; Wenger 1984). By now we also know a lot about who provides support to whom and when this happens. Consistent findings have been reported by numerous studies showing that the partner and the children are the most important supporters within the network, in the exchange of both emotional support and instrumental support (Cantor 1979; Dykstra 1993; Felling, Fiselier & Van der Poel 1991; Litwak & Szelenyi 1969; Shanas 1979; Van Sonderen, Ormel, Brilman & Linden van den Heuvell 1990; Wellman & Wortley 1990; Wenger 1986). Older adults who have no partner or children available generally receive more support

from close relatives, siblings in particular, and from neighbors and friends (Cantor 1979; Dykstra 1993; Goldberg, Kantrow, Kremen & Lauter 1986; Peters & Kaiser 1985; Stoller & Earl 1983). However, support from these types of relationships seldom reaches the level of intensity of that provided by spouse and children.

Whether an older person receives support from the network and how much support is received depends not only on the availability of network members, but also on the older adult's need for support. A distinction can be made in types of support needed. The need for instrumental support is strongly linked to a person's capacities to perform certain activities of daily living, such as keeping house, doing the shopping, or managing personal hygiene. The need for emotional support arises especially during major life transitions, such as losing a spouse or moving into a home for the elderly. During the process of aging the need for both types of support grows as one's physical capacities diminish and one's chance of losing loved ones increases. The functioning of the network as a resource of support therefore increases with age.

Several researchers have studied the reasons behind the ranking in types of supporters for older adults. Litwak has made a major contribution to this field of inquiry with his task-specificity model. He proposes that the match between task-specificity and type of relationship determines who will provide what type of support to older adults (Dono, Falbe, Kail, Litwak, Sherman & Siegel 1979; Litwak & Kulis 1983; Litwak & Szelenyi 1969). The Litwak-model basically states that, since types of relationships vary with respect to proximity, long-term commitment, availability of resources and degree of affectivity, certain types of relationships are more equipped to perform certain tasks than are others. Neighbors, for example, due to their geographical proximity, are better equipped to assist with non-emotional and short-term instrumental tasks like shopping or cooking meals. The partner, the children and other immediate kin are likely to provide both emotional and instrumental support and assist with tasks that involve long-term care and personal hygiene. Empirical evidence has been found in support of the Litwak-model, but it can be argued that characteristics as proximity, commitment, and affectivity are required for every type of network member who is to provide assistance.

Another important contributor to this field of research is Cantor (1979; Cantor & Little 1985). She proposes that older adults have a ranked preference for who is allowed to assist in a given task. She has predicted a hierarchy in preferred supporters, with partner and children at the top, followed by relatives, friends and neighbors, and professional helpers. These types of network members can substitute for one another when the higher-ranked type of network member is absent or not available. Older people who have neither a partner nor children would thus prefer to be assisted by close kin, followed

by neighbors and friends. Professionals are preferred only when all other types of supporters are unavailable.

The models of both Cantor and Litwak are applied in research on caregiving to older adults in tasks requiring instrumental support. With respect to emotional support, however, the literature is less clear on what hierarchy of supporters one might expect. What we do know is that the spouse, children and friends are most often mentioned by older adults when they are asked who serves as a confidant (Babchuk 1978/79; Strain & Chapell 1982). Older adults are likely to discuss their personal problems with their children or with other family members, and they are less likely to do so with neighbors or friends (Cantor 1979). Other writers have also indicated that close kin, siblings in particular, are often providers of emotional support to older adults (Wellman & Wortley 1990); more distant kin are less likely to provide either instrumental or emotional support. As for neighbors and friends, it has often been reported that while such network members may serve as sources of affectional support, their main function lies in the provision of day-to-day companionship and the facilitation of social life (Cantor 1979; Peters & Kaiser 1985; Crohan & Antonucci 1989).

The support patterns described above are found in different Western societies, the USA, the UK, the Netherlands) by researchers using different methods of delineating networks and different measurements of support. It appears that the support function of personal networks is surprisingly similar in modern societies across the world. Empirical evidence in this respect is provided by the cross-national study on social networks by Hollinger & Haller (1990), which has shown that close kin and friends are the most important providers of both instrumental and emotional support in all of the seven examined Western societies, including the USA, Australia and European countries. Cultural differences between nations, e.g. the larger geographic mobility within the USA and the more individualistic life-style in the Anglo-Saxon nations, have effected relationship characteristics as the degree of face-to-face contact, but have not touched on the support functions of the network (Hollinger & Haller 1990). In particular the size of partial networks differs between nations. This may in part be due to differences in availability, e.g., older people in Northern Italy have fewer family members available compared to Dutch older people, resulting in smaller kin networks of the Italians (Van Tilburg, De Jong Gierveld, Lecchini & Marsiglia 1996), or to differences in opportunities to maintain in contact with each other, e.g. the traveling time between kin is far larger in the USA compared to the Netherlands. Theories on support hierarchies of Litwak and Cantor should be applicable to Dutch older adults, when the culturally defined differences in availability of relationships and in opportunities for ‘networking’ are taken into account. As a result, this study

will also attend to determinants of the intensity of received support from network members that differ across Western societies: i.c. the availability of relationships, the geographical distance to network members and the degree of face-to-face contact.

Research questions

In this article we join the researchers named above by focusing on 'who provides what type of support to the older adult', However, we will augment the existing literature by testing the stability of the ranking of supporters over time for specific subsets of respondents. At first, a description of the support network of Dutch older adults is provided. Besides the composition of the network, the first research question addresses whether the anticipated hierarchy in supporters indeed exists among older Dutch adults, examining both instrumental and emotional support received from the personal network. We predict a declining amount of instrumental support received as we move from the spouse through children(-in-law), close relatives (siblings), neighbors, friends, and extended kin to other non-kin. Our anticipated hierarchy of types of network members providing emotional support ranges from the partner, children(-in-law), friends, close kin, neighbors, and other kin to other non-kin. The second research question distinguishes the older adults by partner and parental status, in order to address our expectation that the provision of support by close and extended kin, neighbors, friends and other non-kin is related to the availability of a partner and/or children. In particular, we examine whether the intensity of support from these types network members received by older adults without partner and/or children approaches the levels of support received from spouses and children by the older adults who have these types of relationships available. These issues will be dealt with first by presenting cross-sectional data.

However, the strongest evidence for the presumed hierarchy in types of support providers can be gained by studying changes over time. Changes in the network situation as well as changes in the need for support should be accompanied by shifts in the support hierarchy. It may be expected that the major change in support provision to the older adult occurs after changes in the partner relationship. Because the partner is the major support provider, the network has to take over this role when the partner dies. We predict that children in particular will increase their level of support to the older adult. In the event children are not at hand, we anticipate that close relatives (who may also be widowed), neighbors and friends will intensify their support. Dependent on the relative increase in support, the hierarchy of types of supporters may also change. Our third research question therefore concerns the changes

in support received from different types of relationships by respondents who have lost their partner during the monitoring period, as well as any shifts that occur in the hierarchy of types of supporters.

Another test of the presumed support hierarchy among network members is an investigation of changes in the hierarchy in relation to changes in the need for support. It is assumed that the need for support grows as physical capacities wane. Our fourth research question therefore examines changes in support hierarchies for older adults whose physical mobility has declined over time. Since health problems are directly linked to a reduced capacity to deal with all kinds of practical matters, we have assumed that the need for instrumental support increases even more than the need for emotional support. We anticipate that some network members will increase their level of support provision while others will not; this may or may not result in shifts in the hierarchy of types of supporters. Both instrumental and emotional support are considered, but the greatest increase in intensity is expected to be found in the instrumental support received. Since support provision is also linked to traits of the network member (e.g., gender), to the relationship with the older adult (e.g., contact frequency and geographical proximity), and to traits of the older adults themselves (gender and age), we will control for these types of personal and relationship characteristics in the longitudinal analyses.

Design of the study

Sample and data collection. Face to face interviews were conducted in 1992 with 4,494 respondents who participated in the NESTOR research program known as 'Living arrangements and social networks of older adults' (Knipscheer, de Jong Gierveld, Van Tilburg & Dykstra 1995). This program has composed a stratified random sample of men and women born between 1903 and 1937. The oldest people, and especially the oldest men, are overrepresented in the sample. It was drawn from the population registers of eleven municipalities: the city of Amsterdam (population 714,000, density 4,400 inhabitants per square km) and two rural communities in the western part of the Netherlands (population 18,000 and 14,000, density 300 and 400, and both agglomerations of several small villages); one city (population 52,000, density 1700) and two rural communities (population 36,000 and 9,000, density 600 and 300) in the south; and one city (population 97,000) and four rural communities (populations between 4,000 and 18,000, density between 100 and 400) in the eastern part of the country. These three regions can be taken to represent differences in culture, religion, urbanization and aging in the Netherlands. The response rate was 61.7%. The data were collected by 88 interviewers. The face-to-face interviews lasted an average of one-and-a-

half hours, and the topics covered included among others basic demographics, subjective and functional health status, the personal network, loneliness and well-being. Approximately 11 months later, a follow-up was carried out with the respondents born between 1908 and 1937 by the researchers of the Longitudinal Aging Study Amsterdam (Deeg, Knipscheer & Van Tilburg 1993; Deeg & Westendorp 1994). Some 3,107 respondents participated in the follow-up (81.7%).

In this article we confine ourselves to the respondents born between 1908 and 1937, who were not living in an institution at Time 1 and who participated in the survey at both measuring times ($n = 2,997$). Of these respondents, 2,756 completed the interview section on the personal network at both Time 1 and Time 2. As a result of missing values at either Time 1 or Time 2, the data of 47 respondents were left out of consideration. Analyses in this article have thus been conducted on the remaining sample of 2,709 older adults.

There were 1,320 males and 1,389 females in the sample. The following information on the demographics of the sample concerns the respondents' situation at Time 1. Their average age was 69.1 ($SD = 8.6$; range 54.1 to 84.6). The majority were married (67%); 5% were unmarried, 5% divorced, and 23% widowed. Some 71% were involved in a partner relationship (whether married or not); 23 of them were not living with this partner in the same household, mostly because the partner was hospitalized at the time. About 12% of the sample had no children; 88% had at least one living child. By Time 2, a further 46 respondents had lost their partner.

Network methodology. For both measuring times the same procedure has been followed for identification of the network. The identification method was derived from that used in the study by Cochran, Larner, Riley, Gunnarsson & Henderson (1990). It is a domain-specific approach making use of seven formal types of relationships: household members (including the spouse), children and their partners, other relatives, neighbors, persons from work (including volunteer work) or educational classes, members of organizations (e.g., sports clubs, church congregations, political parties), and others (e.g., friends, acquaintances). For each of the seven domains, the question was posed: 'Please name the persons (in your neighborhood, for instance) whom you have frequent contact with and who are important to you'. Only persons above age 18 could be nominated. A respondent's network size is the sum of all persons identified by this procedure.

Information was gathered on all network members as to type of relationship with respondent, gender, and contact frequency (ranging from 1 = less than once a year to 8 = daily, and recoded to number of days per year). A maximum of ten members were selected on the basis of highest contact frequency

with the respondent. For these ten network members (or fewer, if fewer had been named), information was gathered with respect to age, traveling time (in minutes), length of the relationship, employment status, marital status, and the exchange of instrumental and emotional support between network member and respondent. In this article we use only information on this 'contact network', the ten network members with the highest frequency of contact. This selection of the ten most frequent contacts could possibly create priori differences between respondents with a network size of ten or less and those having networks of eleven or higher. To allow for such disparities we selected only those members with whom contact occurred at least once monthly. This selection encompasses 76% of all network relationships.

The *size* of the contact network used here is therefore the number of persons from the top ten with whom the older adult maintained contact at least once a month. For the present analyses, the variety of *relationship types* were condensed into nine categories, based on Dykstra (1995): spouse or partner (regardless of whether he or she lived in respondent's household), children (including children of the partner/spouse who were not children of respondent), partners of the children (married or unmarried), siblings, siblings-in-law, other kin, neighbors (including people living in the same neighborhood), friends and other non-kin. The size of the partial networks of the nine relationship types was calculated.

One question was asked pertaining to the receipt of *instrumental support*: 'How often did it happen in the past year that X helped you with daily chores in and around the house, such as preparing meals, cleaning the house, transportation, small repairs, filling out forms?', with answer categories never, seldom, sometimes and often, which were assigned values from 0 to 3. One question was asked about the receipt of emotional support: 'How often did it happen in the past year that you told X about your personal experiences and feelings?'

Physical limitations. At both measuring points we asked one question about the degree to which the respondent was constricted in the performance of daily activities by illness, handicaps or chronic diseases. Respondents could indicate whether they suffered severe limitations, light ones or none at all. A total of 384 respondents had experienced a decrease in physical mobility in the intervening period.

Procedure. We first provide a description of the support network at Time 1, including the size of the partial networks and the mean intensity of instrumental and emotional support received. For each of the nine types of relationships we have calculated on a scale of 0 to 3 the mean intensity of the instrumental and the emotional support received across network relationships. This gives

more insight into the extent to which a hierarchy exists among the network supporters of older adults. Next, we consider the mean intensity of both types of support in relation to the partner status and the parental status of the respondents. Four subgroups are distinguished: childless older adults with and without a partner and parents with and without a partner. The means of subgroups of respondents are compared using ANOVAs in which gender and birth cohort are included as factors. The means presented have been adjusted for differences in gender and birth cohort.

To gauge the impact of changes in older adults' situations on the support they receive from their network, we have conducted four regression analyses. These examine instrumental and emotional support separately for the 46 respondents who lost a partner and for the 384 respondents who experienced a decrease in physical mobility between Time 1 and Time 2. To avoid the problem of respondents for whom not all types of relationships were available in their network (especially of consequence in small samples), we decided to analyze differentials in support between the various relationships. Because relationships are nested within respondents, effects and standard errors are estimated incorrectly in ordinary regression analysis because the assumption of independence of units of analysis is violated (Hox & Kreft 1994). Multilevel analysis is able to make correct estimates. Using the ML3 program (Prosser, Rasbash & Goldstein 1991), which is multi-level linear regression analysis with maximum likelihood estimation, allows us to assess separately the effects of relationship type on support intensity for Time 1 and Time 2 and to compare these effects. The units of analysis on the lowest hierarchical level are all relationships with at least monthly contact within the support network at Time 1 and at Time 2, and the units of analysis on the higher hierarchical level are the respondents. At the first step of each analysis, respondent traits (gender, age, partner status, availability of children and total network size), the gender of network members, and the characteristics of the relationships (contact frequency and traveling time) are entered into the regression equation; these characteristics serve as control variables. Additionally, the type of relationship is added to the equation. In the analysis for bereavement seven dummy variables with other non-kin as reference category are used. (In the analysis for a decrease in physical mobility, the partner relationship is the category of reference.) The equation is: $\hat{y} = a + b_1$ sex$+ \cdots + b_8$ travelling time $+$ b_9 relationship type $1 + \cdots + b_{15}$ relationship type 7. In the second step, the measuring time is added to the equation. The estimate of the effect of measuring time after Step 2 is of the overall change between Time 1 and Time 2. In the third step, the interaction terms measuring time $\times$ relationship type are added. Since interaction terms are created for all eight dummy variables for relationship type, including the dummy variable for other non-kin, the

Table 1. Mean size (1–10) and mean intensity of instrumental and emotional support (0–3) in partial networks within the support networks of older adults

	Mean number of network members (n = 2, 709)				Mean instrumental support received*		Mean emotional support received*	
	M	SD	Range	N	M	SD	M	SD
Partner	0.7	0.5	0–1	1777	2.6	0.9	2.5	0.9
Child	2.0	1.5	0–8	2261	1.2	1.0	2.0	1.0
Child-in-law	1.0	1.1	0–5	1531	1.0	1.0	1.6	1.0
Sibling	0.5	0.9	0–6	923	0.5	0.9	1.8	1.0
Sibling-in-law	0.5	0.9	0–7	786	0.4	0.8	1.6	1.0
Other kin	0.5	0.9	0–7	820	0.4	0.8	1.7	1.1
Neighbor	1.3	1.7	0–10	1473	0.6	0.9	1.3	1.0
Friend	0.6	1.1	0–8	805	0.5	0.9	2.0	1.0
Other non-kin	1.0	1.6	0–10	1142	0.4	0.7	1.4	1.0

* Reported only for respondents who have the type of relationship available within their contact network, which explains the varying numbers of respondents for each type of relationship.

measuring time is already taken into account and therefore removed from the equation. The final equation is: $\hat{y} = a + b_1$ sex $+ \cdots + b_8$ travelling time $+$ b_9 relationship type $1 + \cdots + b_{15}$ relationship type$7 + b_{16}$ relationship type $1 \times$ measuring time $+ \cdots + b_{23}$ relationship type $8 \times$ measuring time. The final estimates for relationship type (b_9 to b_{15}) make it possible to assess the hierarchy at Time 1. In addition, the effects by the interaction terms time $\times$ relationship type after Step 3 (b_{16} to b_{23}) allows us to compute the Time 2 estimates per relationship type in order to see whether support increased or decreased within specific kinds of relationships (Francis, Fletcher, Stuebing, Davidson & Thompson 1992). The improvement of the fit of the model after each step will be reviewed.

Results

The contact network

With regard to the composition of the contact network of the total sample, Table 1 shows this type of network to be dominated at Time 1 by children, neighbors, other non-kin and children-in-law. Other types of network members are less likely to be present in the contact network.

Table 2. Mean intensity of received instrumental support (0–3) within the network for nine types of relationships, by partner and parental status of the older adult (n = 2,709)

	N	Childless		Parents		F
		No partner (n = 179)	Partner (n = 155)	No partner (n = 606)	Partner (n = 1,769)	
Partner	1777	–	2.7	–	2.6	1.5
Child	2244	–	–	1.4	1.1	24.2**
Child-in-law	1521	–	–	1.2	0.9	18.4**
Sibling	922	1.1	0.3	0.5	0.3	26.5**
Sibling-in-law	786	0.8	0.4	0.5	0.3	5.3**
Other kin	820	0.7	0.4	0.5	0.3	4.8**
Neighbor	1473	0.8	0.6	0.7	0.5	3.4*
Friend	805	0.7	0.6	0.5	0.3	2.5*
Other non-kin	1142	0.5	0.4	0.4	0.4	1.8

*$p < 0.05$; **$p < 0.01$; means are adjusted for differences in gender and birth cohort.

It is obvious that the partner is the most important supporter in the network for both instrumental and emotional support; the average older adult receives frequent support from the partner, regardless of the parental status (means for instrumental and emotional support are 2.6 and 2.5 respectively on the scale of 0 to 3). The most frequent instrumental support is received from the partner, children and children-in-law, followed at some distance by neighbors, friends and siblings (*ex aequo*), and, least frequently from other kin, siblings-in-law and other non-kin (*ex aequo*). The relationship types from neighbors to other non-kin provide little instrumental support to the older adult.

For emotional support we find a different type ranking of supporters. The partner is now followed in rank by children and friends (*ex aequo*), siblings, other kin, siblings-in-law and children-in-law (*ex aequo*), other non-kin and neighbors. We can see, however, that the intensity of emotional support does not differ all that much between types of network members. Neighbors, who provide the least frequent emotional support, still average 1.4 (meaning between seldom and sometimes). This is only moderately less frequent than friends and children, who score an average of 2.0 (sometimes) in their provision of emotional support to the older adult.

Differences in support intensity by partner and parental status

Table 2 shows the differences in intensity of instrumental support received by older people by a combination of partner and parental status. The findings clearly show that, on the average, the intensity of instrumental support received from partner, children and children-in-law is much higher than the

Table 3. Mean intensity of received emotional support (0–3) within the network for nine types of relationships, by partner and parental status of the older adult (n = 2, 709)

	N	Childless		Parents		F
		No partner (n = 179)	Partner (n = 155)	No partner (n = 606)	Partner (n = 1, 769)	
Partner	1777	–	2.5	–	2.5	0.3
Child	2244	–	–	1.8	2.0	10.5**
Child-in-law	1521	–	–	1.5	1.7	3.1*
Sibling	922	1.8	1.8	1.8	1.8	0.0
Sibling-in-law	786	1.7	1.7	1.5	1.6	0.4
Other kin	820	1.6	1.7	1.6	1.7	0.6
Neighbor	1473	1.1	1.2	1.3	1.4	3.0*
Friend	805	2.0	2.1	2.0	2.0	0.4
Other non-kin	1142	1.3	1.6	1.4	1.5	1.7

*$p < 0.05$; **$p < 0.01$; means are adjusted for differences in gender and birth cohort.

intensity of support received from the other types of network members. The childless and spouseless older adults receive the largest intensities of instrumental support from all relevant types of relationships compared to the other three subgroups of older adults, but the support received from these relationships is usually less compared to the level of support received from a partner or children. There is one exception to this finding: spouseless and childless older adults receive as often or more often support from their siblings (on average 1.1) compared to the intensity of support received by parents with a spouse from children and children-in-law (on average 1.1 and 0.9).

Examining the hierarchy of supporters and leaving out the partner, children and children-in-law, we find interesting differences between the subgroups. For older adults who have either a spouse or a child, the hierarchy of other types of supporters starts with neighbors or friends, followed by close and extended kin and finally by other non-kin. Yet, two exceptions to this hierarchy are to be noted. At first, siblings appear to play different roles in these subgroups. They are ranked first in the support hierarchy of the childless older adults without a spouse and last in the hierarchy of the childless older adults with a spouse. Secondly, friends are ranked relatively low in the hierarchy of spouseless older adults, whereas they are ranked rather high in the hierarchy of older adults who have a partner relationship, regardless of the presence of children.

A different picture emerges when we turn to emotional support (see Table 3). Here we find little difference in the intensity of support received from the different types of network members. The only difference found between the four subgroups is in relationships with neighbors: parents with children receive

the most emotional support from neighbors compared to the other three subgroups.

The partner is the most important provider of emotional support, but children and children-in-law provide emotional support with the same amount or less compared to friends. Older people with a partner receive just as much emotional support as those without a partner. The only significant difference is that the former receive slightly more emotional support from their children than the latter do. All subgroups have the same hierarchy in types of emotional support providers. Leaving out the support from partner and children(-in-law), it appears that friends are the most important providers of emotional support, followed by siblings, other kin, siblings-in-law, other non-kin, and neighbors provide the least.

Changes in support intensity after loss of partner

Table 4 shows the results of the multi-level regression analyses of instrumental and emotional support within relationship types for respondents who lost their partner between Time 1 and Time 2. We must keep in mind that data from a rather small number of respondents are analyzed here, causing relatively large confidence intervals around the effect estimates. For type of relationship we have chosen arbitrarily 'other non-kin' as category of reference.

Older adults who were living with their partner at the time of his or her death received more instrumental support than others (whose partner was most likely hospitalized or institutionalized). The higher the contact frequency, the more support received. The hierarchy at Time 1 can be read from the estimates (B): children are ranked first, followed by children-in-law, neighbors, siblings, other kin, other non-kin (the category of reference), and friends, with siblings-in-law in the lowest position. Adding the measuring time at Step 2 of the analysis reveals that support increases significantly over time ($B = 0.36$, $t = 5.1$). Replacing this overall effect by the effects for specific relationship types in Step 3 fails to significantly improve the model. However, it is shown that children, children-in-law, siblings-in-law and friends do significantly increase the instrumental support they give to the older adult. The ranking of relationship types at Time 2 can be read from the third column (E), which shows the sum of the Time 1 estimates and the estimates of change over time (for example, children give $0.71+0.33 = 1.04$ more support than the category of reference, other non-kin). A comparison of the Time 1 and Time 2 rankings reveals that children, children-in-law and neighbors remain in positions one to three, siblings slip from position four to six, siblings-in-law move up from eight to four, other kin stay at five, friends stay at seven, and other non-kin decrease from six to eight.

Table 4. Multi-level regressions of instrumental and emotional support within relationships for respondents who lost their partner between Time 1 and Time 2; Bs of final equation; N of relationships 714 and 714, respectively; N of respondents 46

	Instrumental support			Emotional support		
	B	t	E	B	t	E
Constant	–0.85	–1.0		0.34	0.3	
Step 1: Entering control variables and relationship type at T1						
Improvement model (df = 15)	$\chi^2 = 128.9$, $p < 0.001$			$\chi^2 = 120.5$; $p < 0.001$		
male (1) – female (2)	0.19	0.9		0.42	1.8	
age (56–85 years)	0.0102	0.9		–0.0075	–0.6	
partner in household (no–yes)	0.45	2.1*		–0.04	–0.1	
children alive (no–yes)	–0.20	–0.7		0.16	0.5	
network size	0.00	–0.4		–0.01	–0.8	
gender of network member	0.01	0.1		0.35	5.4***	
contact frequency (days/year)	0.0021	6.0***		0.0017	5.0***	
traveling time (minutes)	–0.007	–1.4		0.0011	2.3*	
child[a]	0.71	4.2***		0.50	3.1**	
child-in-law	0.53	2.7**		0.39	2.2**	
sibling	0.16	0.7		0.31	1.5	
sibling-in-law	–0.17	–0.8		0.16	0.8	
other kin	0.05	0.2		0.45	2.2*	
neighbor	0.48	2.3*		0.18	0.9	
friend	–0.10	–0.6		–0.19	–1.1	
Step 2: Entering measuring time (to be removed at step 3)						
Improvement model (df = 1)	$\chi^2 = 25.9$; $p < 0.001$			$\chi^2 = 0.9$; $p > 0.05$		
Step 3: Entering interaction terms of relationship type and measuring time (mt)						
Improvement model (df = 8)	$\chi^2 = 2.9$; $p > 0.05$			$\chi^2 = 3.3$; $p > 0.05$		
child × mt	0.33	2.5*	1.04	0.12	1.0	0.62
child-in-law × mt	0.39	2.1*	0.92	–0.14	–0.8	0.25
sibling × mt	0.28	1.2	0.44	0.01	0.0	0.32
sibling-in-law × mt	0.67	2.8**	0.50	0.07	0.3	0.23
other kin × mt	0.41	1.6	0.46	0.11	0.4	0.56
neighbor × mt	0.16	0.7	0.64	0.30	1.3	0.48
friend × mt	0.42	2.4*	0.32	–0.05	–0.3	–0.24
other non-kin × mt	0.29	1.5	0.29	0.12	0.6	0.12

[a] Types of relationship consists of dummy variables with the values 0 and 1; the category of other non-kin relationships serves as category of reference.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

If we turn now to emotional support, the findings indicate that older adults receive more support from female network members and from network members who live relatively far away. Again, contact frequency has a positive effect. None of the estimates for relationship are significant, indicating that at Time 1 the support within the various relationships other than non-kin ones does not significantly differ from the support from other non-kin. Children are ranked first, followed by other kin, children-in-law, siblings, neighbors, siblings-in-law, and other non-kin (the category of reference), with friends taking the lowest position. No significant effect of measuring time appears in the second step of analysis (B $= 0.06$; $t = 1.0$), indicating that overall emotional support did not change after the loss of the partner. Replacing the overall effect of change by support change within specific relationship types in Step 3 confirms the steadiness of emotional support. The ranking at Time 2 does differ slightly from that at Time 1. Children-in-law swap places (from position three to five) with neighbors, but others stay in the same positions.

Changes in support intensity for people with declining physical mobility

Table 5 shows the results of the multi-level regression analyses of instrumental and emotional support within types of relationships for respondents who experienced a decrease in physical mobility between Time 1 and Time 2. Partner relationships are chosen as the category of reference, because bivariate analysis showed no increase of instrumental and emotional support within them over time, and because the average support within partner relationships approached the maximum of the scale used (see also Table 1).

Older adults with lowered mobility who live with a partner receive less instrumental support within their other relationships than people with no partner in their household. Male network members furnish more instrumental support than do females. The higher the frequency of contact with network members and the shorter their geographical distance away, the more support that is received. At Time 1 the hierarchy is in the order of the table: after the partner, children rank second, and at the bottom we find other non-kin. The rankings of the three types of kin and the neighbors are very close together and about equal. At Time 2, the older adults were receiving more instrumental support than at Time 1 (B $= 0.19$; $t = 8.4$). Breaking this overall change down into the specific relationship types further improves the model. Partners do not change in their support, but children, children-in-law, friends and other non-kin increase theirs significantly. The top of the hierarchy at Time 2 is the same as at Time 1: partners, children and children-in-law. The rankings of the other types at Time 2 have grown more or less equal, resulting from the increased support from the types who were low-ranked at Time 1.

Table 5. Multi-level regressions of instrumental and emotional support within relationships for respondents who experienced a decrease in physical mobility between Time 1 and Time 2; Bs of final equation; N of relationships 6457 and 6446, respectively; N of respondents 384

	Instrumental support			Emotional support		
	B	*t*	E	B	*t*	E
constant	2.49	9.3***		1.29	3.7***	
Step 1: Entering control variables and relationship type at T1						
Improvement model (df = 16)	$\chi^2 = 2597.9$; $p < 0.001$			$\chi^2 = 1076.2$; $p < 0.001$		
male (1) – female (2)	–0.07	–1.3		0.25	3.5***	
age (56–85 years)	0.0002	0.1		–0.0024	–0.6	
partner in household (no–yes)	–0.17	–2.8**		0.01	0.2	
children alive (no–yes)	–0.05	–0.6		–0.04	–0.4	
network size	0.00	–1.0		0.01	2.8**	
gender of network member	–0.07	–3.1**		0.25	11.1***	
contact frequency (days/year)	0.0019	16.6***		0.0014	12.1***	
traveling time (minutes)	–0.0009	–6.3***		0.0005	3.7***	
child[a]	–1.20	–17.6***		–0.38	–5.6***	
child-in-law	–1.34	–17.6***		–0.60	–8.0***	
sibling	–1.74	–19.7***		–0.56	–6.3***	
sibling-in-law	–1.69	–18.7***		–0.60	–6.7***	
other kin	–1.72	–19.8***		–0.70	–8.1***	
neighbor	–1.75	–20.5***		–0.45	–5.3***	
friend	–1.90	–26.6***		–1.03	–14.4***	
other non-kin	–1.96	–24.1***		–0.88	–10.9***	
Step 2: Entering measuring time (to be removed at step 3)						
Improvement model (df = 1)	$\chi^2 = 70.8$; $p < 0.001$			$\chi^2 = 92.7$; $p < 0.001$		
Step 3: Entering interaction terms of relationship type and measuring time (mt)						
Improvement model (df = 9)	$\chi^2 = 24.3$; $p < 0.01$			$\chi^2 = 8.6$; $p > 0.05$		
partner × mt	0.00	0.0	0.00	0.12	1.5	0.12
child × mt	0.27	6.3***	–0.93	0.27	6.3***	–0.11
child-in-law × mt	0.26	4.5***	–1.08	0.17	3.0**	–0.43
sibling × mt	–0.02	–0.2	–1.76	0.24	3.0**	–0.32
sibling-in-law × mt	0.02	0.2	–1.67	0.18	2.0*	–0.42
other kin × mt	0.13	1.5	–1.59	0.33	4.0***	–0.37
neighbor × mt	0.13	1.6	–1.62	0.16	2.0*	–0.29
friend × mt	0.22	4.1***	–1.68	0.14	2.7**	–0.89
other non-kin × mt	0.29	3.9***	–1.67	0.25	3.5***	–0.63

[a] Types of relationship consist of dummy variables with the values 0 and 1; the category of partner relationships serves as category of references.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

As for emotional support within the various relationships, females receive more than males, and when a large network is available more support is received than from a small network. Female network members provide more support than males, and more support is forthcoming in relationships with a high contact frequency and in those types whose network members live further away. Again, partner relationships rank first, followed by children. In the middle we find neighbors, siblings, children-in-law, siblings-in-law and other kin. Other non-kin took position eight, and we again find friends low in the hierarchy, now in position nine. In Step 2 of the analysis the effect of the measuring time proves significant ($B = 0.21$; $t = 9.7$), indicating that an increase in emotional support has occurred between Time 1 and Time 2. The model is not significantly improved in Step 3 by specifying the overall change as change within relationship types. The overall effect is valid for all relationship types except partner relationships. The ranking at Time 2 is practically the same as that at Time 1; the category of other kin moves up to fifth place, surpassing children-in-law and siblings-in-law.

Discussion

Our first aim in this article was to examine the hierarchy of types of supporters that older adults can rely on. Our analyses of cross-sectional data from a large sample of older Dutch adults have indicated that the partner and children are the leading providers of both instrumental and emotional support. In this respect our findings corroborate the findings of other studies in other countries. For instrumental support, children-in-law are ranked after children. The remaining types of relationships provide support of about equal intensity, making it hard to discern a hierarchy among close and extended kin, neighbors, friends and other non-kin. It seems that these types of relationships provide little instrumental support to older adults. Thus, the hierarchy in types of supporters which we anticipated is not clearly present in the overall sample. For emotional support, the hierarchy in Table 1 comes closer to our expectations, with partner, children and friends occupying high positions, other types of kin in intermediate ones and neighbors and non-kin ranking lowest. But we must bear in mind here that the means in Table 1 have not yet been adjusted for aspects related to the receipt of support, such as characteristics of relationships, network members or the older adults themselves.

The availability of a partner and children does affect the intensity of instrumental support received from network members, especially from siblings and friends. However, the level of intensity of support of the network members hardly reaches the level of support received from partner and children(-in-

law). The absence of either a partner or a child relationship is thus not fully compensated by the support received from other types of network members.

The hierarchy of instrumental supporters varies by parental and partner status of the older adult. For most older adults neighbors are the next important supporters after partner and children(-in-law), which is in line with the task-specificity theory of Litwak that stresses the geographic closeness of neighbors. In Cantor's ranking of preferred supporters close kin are placed above neighbors. This type of hierarchy is only found for the spouseless and childless older adults. They receive the most instrumental support from their siblings, followed by neighbors and siblings-in-law. The ranking of friends also differs between the subgroups. Whenever a spouse is present, friends and neighbors seem to be preferred above kin as support providers, which, assuming that neighbors and friends live closer to the adult than kin, is in line with Litwak's hierarchy based on task-specificity. Whenever a spouse is absent, close kin and neighbors appear the most preferred sources above friends and extended kin, which is more in line with Cantor's model. These findings suggest that older adults with a partner are less involved in family contacts and participate more in social interactions with friends, resulting in more instrumental support from friends in times of need. Also, close kin may feel more obligated to help an older relative when he or she is alone. It can thus be concluded that the support hierarchy of the older adult differs by partner status. Whether these differences are the result of differences in preferences of the adult or of differences in the task-related aspects of types of relationships, can not be answered with our data-set. This requires performing further analyses in which both individual standards and relationship characteristics are taken into account.

For emotional support we find no differences between people with or without a partner or children, either in the intensity of the support received or in the hierarchy of types of supporters. The receipt of emotional support is influenced in some relationships by the availability of children, but here the hierarchy in types of support providers is not affected. Our study indicates that friends are more important than kin in the provision of emotional support to older adults. This finding corroborates the conclusion of other researchers that friends are primary important sources of emotional support. In second place they are also providers of instrumental support, but, as was discussed above, this differs with the partner status of the older adult. In current support literature friends and neighbors are still too often treated as comparable sources of support and opposed to kin relationships. Our study has indicated that friends, neighbors and kin clearly perform different functions in the lives of older adults. These findings buttress our expectation that different types of relationships provide different types as well as different quantities of support.

Another central issue in this article concerns the possible shifts in supporters' intensity and hierarchy after the major supporter, the partner, has been lost by death. Our longitudinal analyses indeed reveals an increase in instrumental support received from children, children-in-law, siblings-in-law and friends. Children, children-in-law and neighbors remain the foremost supporters following the loss, but siblings-in-law increase their support intensity as well as their hierarchical ranking, causing siblings and other non-kin to decline in rank even though they do not alter their intensity of support. For emotional support, however, we find neither significant increases in support intensity nor appreciable shifts in the hierarchy of supporters.

For respondents who suffered a decrease in physical mobility, our findings point to a significant jump in instrumental support from children, children-in-law, friends and other non-kin, causing only slight shifts in the rankings of types of supporters. For emotional support we witness significant increases in support intensity in almost every relationship type, but here too no great changes occur in the hierarchy of supporters.

The multi-level analyses suggest some general conclusions. First of all, type of relationship remains a key predictor of the support intensity and of changes in it, even when other aspects of the relationship and background variables of the older adults are taken into account. All analyses underline the importance of partners and children as providers of both instrumental and emotional support to older adults. Neighbors also prove key providers of support to older adults, both instrumental and emotional. A significant role of neighbors in the provision of emotional support is apparent only in subsets of respondents, and not in the overall sample of older adults. This points to the specific roles neighbors may assume in particular circumstances, and suggests that they come into action especially when help is needed. Our distinctions between various types of kin (siblings, siblings-in-law and other kin) have proved fruitful, since they reveal differences in the kinds of support they provide. Other kin emerge as important providers of emotional support to people who have recently lost their partner, whereas siblings-in-law have increased their level of instrumental support to the newly bereaved.

One remarkable finding is the low ranking of friends in the support hierarchies of the subsets of respondents compared to the support hierarchies of the total sample. Contrary to our expectations, friends even score lowest in the provision of emotional support to the bereaved. Though friends increase their level of instrumental support after the older adult has lost a partner or declined in physical mobility, friends still provide support of comparatively low intensity. Compared to neighbors (other characteristics of the relationship being equal) friends turn out to play a less crucial role than we might expect in the lives of older adults who have gone through a major life transition.

Partly, these findings may be due to the small number of respondents and friend relationships the analyses were performed with. It is also likely that the network members anticipated the bereavement or decrease in physical mobility of the older adult at Time 1 and that neighbors and kin already increased their supportive behavior, resulting in a level of pre-event support that is comparable or higher to the pre-event support provided by friends.

A second conclusion is that changes in support intensity do not necessarily lead to shifts in the ranking of types of supporters. The ranking at Time 2 depends on the change of support and the amount of support given at Time 1. Obviously, when everyone increases their level of support by the same amount, the hierarchy will not change. Our findings show that the hierarchy of types of supporters is rather stable over time, despite alterations in support intensity for some types of relationships. It should be marked here that we base this conclusion on the analyses with two specific subsets of older adults, chosen because we assumed that the two life-events would have a large impact on the support hierarchies. The present data do not allow conclusions on the stability of support hierarchies in the total sample, because the covered time period of one year is too short to determine which changes in support hierarchies are related to the 'normal' changes in every-day life and which are related to major transitions. In the near future we will be able to use data collected with the total sample at three times of measurements covering a time-span of four years and will be able to say more on the stability of support hierarchies in a general population of older adults.

Thirdly, the findings underscore that relationship characteristics, such as contact frequency and traveling distance, are important determinants for the provision of support to others. Such characteristics contribute to individual differences within subsets of relationships: for example, not all children increase their intensity of support, but they are very likely to do so when they live nearby. In our multi-level analyses we allowed not only for such individual differences between network members, but also for the amounts of support provided by other members of the network. The results indicate, for example, that alongside the support provided by children to a bereaved parent, siblings-in-law also increase their level of instrumental support.

Fourthly, we can conclude that a hierarchy exists in the support networks of older adults which is based on type of relationship (partner, children, neighbors and friends, kin, other non-kin), independently of the type of support required. Neither the loss of a major supporter nor a deterioration in personal health transforms this hierarchy of supporters to any appreciable extent.

Finally, by controlling for relationship and network characteristics in our analyses, we increased the generalizability of our findings to other Western societies. There is no reason to assume that our findings on Dutch older

adults are not applicable to older adults in other European countries or in the USA. In the Netherlands, as in most Western cultures, children, neighbors and friends are among the most important supporters of older adults. Our study has added to the present knowledge of support patterns by presenting findings on variations in support hierarchies of older adults and on its stability over time after the experience of a major life transition.

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